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AUTHOR Gregory, James F.
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ABSTRACT

In the High School and Beyond (HSB) study, data on over 58,000 American tenth and twelfth graders were collected. The current study performed secondary analyses on three special needs groups from the public school data set: 1200 hearing impaired students, 767 speech disabled students, and 1249 learning disabled students. Disabled students were found to be significantly older than non-impaired peers, and a disproportionately high number of minority children were identified as disabled. On all measures of academic achievement the disabled students fared more poorly than did non-disabled classmates. Handicapped students reported lower estimates of self-concept and adjustment and a significantly higher frequency of being in trouble with the law. Finally, compared to non-disabled peers, the disabled pupils reported having more school-related problems and stress, doing less homework, and having lower work orientations and career aspirations. Four tables are provided. (Author/DB)

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A SECONDARY ANALYSIS OF HSB DATA RELATED TO SPECIAL EDUCATION

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James F. Gregory

St. John's University

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ABSTRACT

In the High School and Beyond (HSB) study, data on over 58,000 American tenth- and twelfth-graders were collected. Results from secondary analyses of the HSB base regarding three special needs groups in the public school classrooms---hearing impaired, speech disordered, and learning disabled---are presented here. The disabled youngsters were found to be significantly older than their non-impaired peers, and a disproportionately high number of minority children were identified in the special needs cohorts. On all measures of academic achievement the disabled students fared more poorly than did their non-disabled classmates. Similarly, the handicapped youngsters reported lower estimates of self-concept and adjustment and a significantly higher frequency of being in trouble with the law. Finally, compared to their non-disabled counterparts, the disabled pupils reported having more school-related problems and stress, doing less homework, and having lower work orientations and career aspirations. Limitations of this secondary analysis as well as implications for future lines of research are discussed.

INTRODUCTION

Over the last several years, Tim Shanahan, Herb Walberg and I have been pouring over the HSB data in an effort to highlight variables associated with certain handicapping conditions. Even with this restricted focus, however, the number of items we dealt with was substantial (approximately 700 discrete data points for each subject). Given the severe time constraints for the present talk, I am afraid I will have to be even more selective and restrict the discussion to only those few items I felt to be of particular interest to the group. At the end of the talk, however, I will distribute a bibliography listing the orignal articles for the reader who desires a fuller accounting.

Before getting into the meat of the discussion, a few preliminary points are in order:

1. I have opted to discuss only three handicapping conditions: hearing impairment, speech disorders, and specific learning disability. The rationale for this lay in the fact that the three conditions share a strong linguistic component, thus providing us with a more clearly defined focus.

2. The HSB team studied both tenth-graders and twelfth-graders. Often, the specific items (for example, on the academic achievement tests) for the sophomores were quite different from those for the seniors. Since the responses for the two levels were not comparable, we will be reporting on six different analyses here, i.e., two each (senior and sophomore) for each of the three handicapping conditions.

3. I will be showing several tables on the overhead. For the sake of clarity and ease of interpretation, I will depart from the standard procedure of presenting actual numbers (e.g., numbers of items for composite scores, group means, results of F-tests, and p-values) in favor of a simplified symbol system. A "-" indicates that the group mean score for the handicapped was statistically significantly below that for the non-handicapped peers, a "+" indicates that the handicapped group mean was significantly above that of the non-handicapped group, and a "0" indicates no significant difference. Statistical significance here was taken to be a p-value of .05 or less, although in point of fact in the overwhelming majority of cases the p-value was at less than .001 (Not surprising, perhaps, in light of the large numbers of subjects).

METHOD

In the background questionnaire for both levels (sophomore and senior) there was an item which asked in effect, "Do you have any of the following conditions: hearing impairment, speech disorder, specific learning disability?", etc. In the following analyses, then, the dichotomous independent variable was positive versus negative response to this query. The general linear model was used to test for the effects of reported disability on the other factors as dependent variables. Sex and socioeconomic status (an HSB-generated composite score) were

statistically controlled, as they have known associations to school performance and since the purpose of this series of analyses was to highlight the effects of the disorders as such.

The original HSB-data base contained nearly 700 data points for each subject. For our series of analyses only those items judged strongly related to achievement or shown by quantitative syntesis to be so associated were analyzed. For today's discussion I have further paired the list down to 286 discrete items (32 when composite scores are taken into account).

RESULTS

Table 1 shows the results regarding the basic demographic charateristics of age and ethicity. Across the board the special needs students are sitgnificantly older than their repective senior and sohpomore classmates. The results on ethnicity are rather mixed, however. Reading across, we see the White students at both grade levels are represented in the hearing impaired cohort at essentially the same rate as in the non-hearing impaired group. This is of course pure speculation here, but I suspect we may be seeing the differential effects of type of diagnosis operating. That is, determination of hearing loss relates to physical parameters involved in an actual sensory deficit and thus may have a higher objective valence. This is perhaps not the case with speech disorders and learning disabilities, in which value judgments play a strong role. Thus, in a predominantnly White middle class system such as the school, the White children may be less often perceived

as speech or learning disordered whereas hearing losses are more objectively quantifiable.

This contention seems to be buttressed by examination of the results relating to minority students. In thirteen of the eighteen cases minority children have statistically higher-than-average incidences of reported disability. Note also that three of the five remaining "non-positive" cases specifically involve the less subjective category of hearing impairment.

Although the pattern is not perfect, in toto, then, it does seem that minority children are found in the handicapped categories at an overall high rate. This seems especially true of the two "subjective" categories of speech and learning disabilty.

Table 2 presents the results of the academic achievement tests for the two grade levels. Things here are substantially easier to interpret. In terms of all disability groups and on both grade levels, the special needs students fare more poorly.

Effect sizes are not presented. In fact, in all cases they were substantial. However, the differences between handicapped and non-handicapped groups means were particularly pronounced for the speech and LD groups. Here again a slight difference in sampling might be operating. That is, there are still a large number of separate facilities for the deaf in the country. And, it is likely that those deaf students with the more serious academic deficits remain in these special schools. HSB was perhaps locating only those deaf students with <u>relatively</u>

stronger skills. In other words, these mainstreamed hearing impaired students were not likely to be representative of all hearing impaired youngsters. Conversely, there are few separate factilites for speech and learning disordered and---thus---a much wider ranger of such students may have been available forthe HSB testing.

A second point merits mention here. At first glance, the consistently lower tested achievement may be disenchanting, pointing to a failure by the schools to adequately educate these special youngsters. Such a judgment may be premature, however. We must recall that all of thse youngsters by definition started with a deficit. Given that fact, it may be equally probable that the schools have done an exemplary job of preparing these students. The present data simly cannot differentiate between the two speculations.

Table 3 displays data pertaining to personal charateristics. Aside from the one instance of no significant differences regarding speech disabled tenth-graders on the measure of peer environment (basically an index of friends' grades), all differences are significant. Critically, on the measures of self-rated adjustment, external locus of control, degree of personal independence, self-assessment of physcial attractiveness, and self-assessment of one's own popularity, the handicapped children display significantly lower scores. There is only one category in which the handicapped children outscore their non-handicapped peers and that is a dubious achievement indeed---the handicapped children report significantly more frequent scrapes with the law!

Table 4 offers data regarding school and work. The hearing impaired and speech disordered children indicated a high-than-average involvement with school-based extracurricular activities. This might be due, however, to a greater dependence upon formally organized activities for their social lives.

In terms of schoolwork per se, it can be seen that the handicapped seniors and the LD sophomores reported having taken fewer academic courses as such (The lack of disparity with the sophomore hearing impaired and speech disordered students may be attributable to the fact that by sophomore year fewer options for electives have as yet arisen). Significantly, all of the handicapped sophomores reported a greater sense of stress related to school and the hearing impaired and learning disabled students on each level reported a lowered motivation/interest level regarding school. All of the special students reported more frequent school problems. This generally depressed attitude is in tune with the fact that all of the special needs cohorts reported doing less homework than their peers (Although this may also be due to the fact that, being handicapped, these special students may simply be assigned less homework).

It is noteworthy that the handicapped youngsters (except for the speech disabled seniors) reported watching the same amount of t.v. as their peers. This could be accounted for, however, by a certain ceiling effect, i.e., all the subjects---handicapped or otherwise---appararently spent a disproportionate amount of their free time in front of the tube. Unfortunately for the handicapped students, their

previously-mentioned academic achievement suggests that they had even less latitude to so spend their time.

It is noteworthy that the handicapped sophomores projected lower eventual educational aspirations (a comparable item was not available for the seniors). Of course, in light of their achievement and reported feelings toward school, this may not be unrealistic. Finally, the handicapped students revealed a lower work orientation and generally lowered future job aspirations.

SUMMARY

While a few exceptions have been noted, the data by and large are negative. Not only did the handicapped youngsters exhibit greater academic difficulties but their responses suggested more serious personal difficulties, lowered self-esteem, and lowered motivation.

CONCLUSIONS

While the advantages to the HSB data base are manifold (especially in terms of comprehensiveness of sampling), there are several weaknesses in terms of the present research. For example, the original HSB survey was designed to test the American sophomore- and senior-year populations as a whole and not to specifically survey the handicapped. Consequently, items of special interest in a study of the disabled (e.g., age of onset and type and degree of hearing loss for the hearing impaired) were not available. More critical perhaps is the

problem of identification. Perhaps special care should be exercised here regarding interpretation because the subjects were identified by self-nomination and that procedure is fraught with obvious problems. It should also be recalled that we are dealing with group means here. Consequently, it is quite possible a number of hearing impaired, speech disordered, or learning disabled children in the public schools are faring quite well despite group tendencies.

Finally, I feel I should reiterate the point regarding ascribing blame for the problems of these students to the schools per se. We must keep in mind that by definition these special students "started in a hole".

With these caveats in mind, I hope these data have been informative. In particular I hope they might suggest some future directions for research regarding special students in the regular classroom. While there are a variety of directions to go here, my personal inclination is to further investigate the discrepancies in ethnic background among these students. The possibility that White and Minority handicapped students experience differential opportunites based on ethicity is troubling indeed.

TABLE 1:

AGE AND ETHNIC BACKGROUND

	12TH.-GRADE			10TH-GRADE		
	HI	SD	LD	HI	SD	LD
AGE	+	+	+	+	+	+
ETHNIC BACKGROUND						
White	0	–	–	0	–	–
Black	–	0	+	0	+	+
Hispanic	+	+	+	+	+	+
Asian	+	+	+	0	+	0

n's:

12th-grade		10th-grade	
Hearing impaired	= 514	Hearing impaired	= 686
Non-hearing-impaired	=25,632	Non-hearing-impaired	=26,418
Speech disabled	= 278	Speech-disabled	= 489
Non-speech-disabled	=25,866	Non-speech-disabled	=29,541
Learning disabled	= 439	Learning-disabled	= 810
Non-learning-disabled	=25,708	Non-learning-disabled	=29,220

TABLE 2:
ACADEMIC ACHIEVEMENT

	No. of items	HI	SD	LD	
READING	20	-	-	-	Seniors
VOCAB, 1	15	-	-	-	
VOCAB, 2	12	-	-	-	
MATH, 1	25	-	-	-	
MATH, 2	8	-	-	-	
READING	20	-	-	-	Sophomores
VOCAB	21	-	-	-	
MATH	38	-	-	-	
WRITING	17	-	-	-	
CIVICS	10	-	-	-	
SCIENCE	20	-	-	-	

TABLE 3:
PERSONAL CHARACTERISTICS

	No. of items	12th.-GRADE			10TH.-GRADE		
		HI	SD	LD	HI	SD	LD
PEER ENVIRON.	4	-	-	-	-	0	-
ADJUSTMENT	2	-	-	-	-	-	-
CONTROL LOCUS	6	-	-	-	-	-	-
INDEPENDENCE	5				-	-	-
PHYSICAL ATTRACTIVENESS	1	-	-	-	-	-	-
POPULARITY	1				-	-	-
LAW TROUBLE	1	+	+	+	+	+	+

TABLE 4:
SCHOOL AND WORK

	No. of items	12th.-grade HI	12th.-grade SD	12th.-grade LD	10th.-grade HI	10th.-grade SD	10th.-grade LD
SCHOOL							
No. of acad. courses	10	-	-	-	0	0	-
School stress	8				+	+	+
School probs.	3	+	+	+	+	+	+
Amount of t.v.	1	0	+	0	0	0	0
Amount of homework	1	-	-	-	-	-	-
Extracur. activities	15	+	+	0	+	+	0
Educational aspirations	13				-	-	-
WORK							
Work orientation	3	-	-	-	-	-	-
Job aspirations	1	0	-	-	-	-	-